

ACCESSION NR: AP4043616

S/0056/64/047/002/0455/0463

AUTHORS: Brandt, N. B.; Gaydukov, Yu. P.; Itsekevich, Ye. S.;
Minina, N. Ya.

TITLE: Effect of pressure on the oscillation effects in bismuth

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 2, 1964, 455-463

TOPIC TAGS: bismuth, quantum statistics, resistance, magnetic susceptibility, low temperature phenomenon, high pressure research, Fermi surface

ABSTRACT: This is a sequel of an earlier study by two of the present authors (Gaydukov and Itskevich, ZhETF, v. 45, 71, 1963) on the effects of uniform compression on the quantum oscillations of the electric resistance (Shubnikov-deHaas effect) of zinc. The present study is devoted to the effective uniform compression on the quantum oscillations of the magnetic susceptibility (pressures

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1300--1600 kg/cm²) and the electrical resistance (at 3000--7500 kg/cm²) in bismuth at liquid helium temperatures. The test procedure is described. In addition, the influence of pressure on the deHaas-van Alphen effect was investigated using a procedure described elsewhere (N. B. Brandt, Ya. G. Ponomarev, PTE, no. 6, 114, 1961). The influence of uniform compression on the quantum oscillations of the electric resistance was measured by a method of Ye. S. Itskevich (PTE, no. 4, 148, 1963). The results showed a decrease in the oscillation frequency, amounting to 37% at 7500 kg/cm². The results are interpreted on the basis of a model wherein the Fermi surface of bismuth consists of one hole and three electron ellipsoids, and the test results on the two effects in bismuth are in good mutual agreement. An analysis of the influence of uniform compression on the Fermi surface shape and on other characteristics of bismuth at low temperatures is presented. The possibility that bismuth would go over into a dielectric state at low temperatures is discussed. "We thank L. F. Vereshchagin and A. I. Shal'nikov for

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their interest in this work and V. A. Sukharov for help with the experiments." Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University); Institut fiziki vy*sokikh davleniy Akademii nauk SSSR (Institute of Physics of High Pressures, Academy of Sciences SSSR)

SUBMITTED: 17Mar64

ENCL: 01

SUB CODE: SS

NR REF SOV: 014

OTHER: 006

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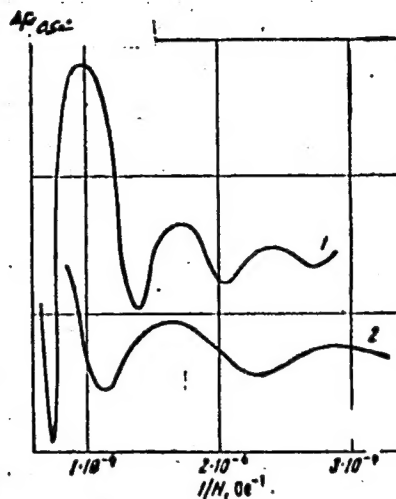
ACCESSION NR: AP4043616

ENCLOSURE: 01

Dependence of oscillating part
of magnetoresistance on the
reciprocal magnetic field in-
tensity at 1.5K.

1 - $p = 0$
2 - $p = 7500 \text{ kg/cm}^2$

Curves shifted vertically in
arbitrary fashion



L 00719-66 ENT(1)/ENT(m)/ETC(m)/ENP(b)/ENP(t) IJP(c) JD

ACCESSION NR: AP5014236

UR/0386/65/001/003/0025/0031

AUTHOR: Gaydukov, Yu. P.; Krechetova, I. P.

TITLE: Variations in resistance and open electron trajectories in zinc

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 3, 1965, 25-31

TOPIC TAGS: zinc, single crystal, electric resistance, magnetic field, electron motion, electron trajectory, magnetic effect

ABSTRACT: The "magnetic breakdown" effect has been proposed as a theoretical explanation for the anomalous phenomena of huge variations in resistance and open electron trajectories in the (0001) plane in zinc. To check this hypothesis, the authors conducted experiments aimed at detecting a relationship between these two phenomena. Galvanic measurements were made at a temperature of 1.3°K in fields of up to 24,000 oersteds using zinc single crystal specimens with dimensions of 1 × 1.5 × 20 mm. The ratio of resistance at room temperature to resistance at 4.2°K in these samples was ~18,000. The axes of the specimens were either parallel to plane (0001) or at a small angle to this plane. The amplitude of variations in re-

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istance was measured as a function of the direction of the magnetic field and the measuring current with respect to the crystallographic axes. The amplitude of the variations reached a maximum for field directions parallel to plane (10 $\bar{1}$ 0). The amplitude fell to 1/10 at deviations of 3-4°. It was found that the region of huge variations in resistance in zinc coincides with magnetic field directions where open electron trajectories appear on the Fermi surface in the basal plane. The full results of the investigation will be published in a subsequent article. "We are sincerely grateful to Professor A. I. Shal'nikov for his interest in the work and his concern." Orig. art. has: 2 figures. 44.55

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University) 44.55

SUBMITTED: 26Mar65

ENCL: 00

SUB CODE: EM, SS

NO REF SOV: 002

OTHER: 004

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L 11965-66 EWT(1)/EWT(m)/EWP(t)/EWP(b) LIP(c) JD
ACC NR: AP5026593

SOURCE CODE: UR/0056/65/049/004/1049/1053

AUTHOR: ^{44,55} Gaydukov, Yu. P.

ORG: ^{44,55} Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Anisotropy of the ^{21, 44, 55} electrical resistance of ^{1 27} indium in a magnetic field

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 4, 1965, 1049-1053

TOPIC TAGS: indium magnetoresistance, galvanomagnetic effect, single crystal, angular distribution

ABSTRACT: The dependence of the resistance on the crystallographic direction and on the ^{44, 55, 21} magnetic field intensity was measured for three single-crystal samples of indium whose axes were parallel to [001], [101] and [110]. The crystals were grown by the Obreimov-Shubnikov method in glass capillaries, and were 1.5 -- 2 mm in diameter and about 30 mm long. The angle and field dependences of the resistance were measured in two stages, automatically with a two-coordinate recorder and manually at selected points, the latter to facilitate elimination of the thermoemf, Hall emf, and null drift of the amplifier. The measurements were made

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ACC NR: AP5026593

6.

in fields up to 23 kOe at 4.2 and 1.3K. None of the samples exhibited anisotropy of resistance in a magnetic field. The resistance of the samples decreased by a factor of 18000 when the samples were cooled from 300 to 4.2K. On further cooling to 1.3K the resistance decreased by another factor of 3. The dependence of the resistance on the magnetic field intensity was plotted for different crystallographic directions, and all plots exhibited saturation. The results confirm that the Fermi surface of indium is not open. Author thanks V. F. Gantmakher and R. T. Mina for interest in these measurements. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 13May65/ NR REF SOV: 004/ OTH REF: 002

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Card

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L 15366-66 EWT(1)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD/AT

ACC NR: AP6000194

SOURCE CODE: UR/0056/65/049/005/1411/1423

AUTHORS: Gaydukov, Yu. P.; Krechetova, I. P.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Open electron trajectories and resistivity oscillations in zinc
21.44.55

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 5, 1965, 1411-1423

TOPIC TAGS: zinc, resistivity, magnetoresistance, single crystal, galvanomagnetic effect, magnetic field

ABSTRACT: The purpose of the investigation was to discover a relationship between open sections of the Fermi surface and resistivity oscillations in zinc. To this end, the resistivity oscillation amplitude (with period $6.2 \times 10^{-5}/\text{Oe}$) was measured as a function of the magnetic field direction and of the measuring current in pure zinc, single crystals within magnetic fields up to 24 kOe at 1.3K. The single crystals were grown by the Obreimov-Shubnikov method or were

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cut from larger crystals by spark erosion. The samples were mounted conventionally for galvanomagnetic measurements at helium temperatures. The test procedure in methods of eliminating the monotonic-increase background of the resistivity oscillations are described. The test results obtained were improved values of the dimensions of the projections of preferred magnetic field directions for the open Fermi surfaces of zinc, the resistivity oscillation amplitude as a function of the angle for different field magnetic rotation angles. The results indicate that the region of resistivity oscillations coincides with the region of magnetic field directions for which open cross sections of the Fermi surface occur in the basal plane. The oscillation amplitude is determined by the electrons that belong simultaneously to open and closed zinc Fermi surfaces. The experimental results suggest that magnetic breakdown of the Fermi surface occurs in zinc. Authors thank Professor A. I. Shal'nikov for interest in the work. Orig. art. has: 7 figures and 13 formulas.

SUB CODE: 20/ SUBM DATE: 04Jun65/ ORIG REF: 007/ OTH REF: 012

Card

2/2 *AC*

GAYDUKOVA, L.A.

"Cuba; historical and ethnological studies" edited by A.V.Efimov,
I.R.Grigulevich. Reviewed by L.A.Caidukova. Izv. AN SSSR.
Ser. geog no.1:158-159 Ja-F '62. (MIRA 15:2)

(Cuba—History)

(Cuba—Ethnology)

(Efimov, A.V.)

(Grigulevich I.R.)

GAYDUKOVA, N. P.

Gaydukova, N. P. -- "Biological Fundamentals for the Organization of Pasture Rotations in the Northern Portion of the Desert Steppe." Min Higher Education USSR, Stalingrad Agricultural Inst, Stalingrad, 1955 (Dissertation for the Degree of Candidate in Agricultural Sciences)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

SUBBOTINA, A.P., uchitel'nitsa, GAYDUKOVA, T.A., uchitel'nitsa,
BARABASH, A.D., uchitel'nitsa, PAVLOVA, M.I.; SOPKIN, G.A.;
ADAYEV, M.U.

Speeches of delegates to the All-Union Teachers' Congress. Biol.
v shkole no.5:10-16 S-0 '60. (MIRA 13:11)

1. Goryachevodskaya srednyaya shkola, predgornogo rayona, Stavropol'skogo kraya (for Subbotina). 2. Kantemirskaya srednyaya shkola, Voronezhskoy oblasti (for Gaydukova). 3. Srostinskaya srednyaya shkola, Altayskogo kraya (for Barabash). 4. Direktor Yermishinskoy sredney shkoly, Ryazanskoy oblasti; chlen-korrespondent Akademii pedagogicheskikh nauk RSFSR (for Pavlova). 5. Direktor Tigil'skoy sredney shkoly, Kamchatskoy oblasti (for Sopkin). 6. Direktor Kadgaronskoy sredney shkoly, Severo-Osetinskoy ASSR (for Adayev).
(Agriculture—Study and teaching)

SOV/81-59-16-56922

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 16, p 137 (USSR)

AUTHORS: Gutkina, R.I., Gaydukova, V.G.

TITLE: The Spectral Analysis of Pure Antimony Metal

PERIODICAL: V sb.: Materialy 1-go Ural'skogo soveshchaniya po spektroskopii, 1956. Sverdlovsk, Metallurgizdat, 1958, pp 81-84

ABSTRACT: A method for determining Cu, Zn, Pb, Na, Fe, As, Ni, Bi, Co and Mn in pure antimony (99.98%) has been developed. The standards are prepared by the dilution of the standard sample SbN 187 of the Ural Institute of Metals with very pure antimony. The samples and the standards are placed in the opening of a carbon electrode. The spectra are photographed with an average quartz spectrograph. If the concentration of the element in the standard Nr 187 is C and the mass of the addition of the analyzed sample is n times greater than the mass of the standard, then the concentrations after the additions are equal to: $(C + nx)/(n + 1)$, $(C + n_1x)/(n_1 + 1)$, etc. In the coordinates I_1/I_2 , versus C a straight line is drawn through the point corresponding to the standard Nr 187 and the origin. All the remaining points deviate from the straight line and their de-

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The Spectral Analysis of Pure Antimony Metal

SOV/81-59-16-56922

viation along the axis of the abscissa is equal to $nx/(n+1)$; hence the unknown concentration x can be found. The conditions of the analysis, among them the problem of the background allowance, are not illuminated in the article. The found concentrations of the admixtures in Sb are within the range of $n \cdot 10^{-4}$ - $n \cdot 10^{-3}\%$.

G. Kibisov.

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GAYDUKOVA, V.S.

Evolution of columbite and feromite replacing pyrochlore.
Zap. Vses. min. ob-va 89 no.4:460-464 '60. (MIRA 13:11)

(Columbite) (Feromite) (Pyrochlore)

ZHABIN, A.G.; GAYDUKOVA, V.S.

Interrelation of pyrochlore, fersmite, and columbite niobates
in alkaline syenite and carbonatite complexes. Geol.rud.
mestorozh. no.1:87-98 Ja-F '62. (MIRA 15:2)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh
elementov AN SSSR, Moskva, i Vsesoyuznyy nauchno-issledovatel'-
skiy institut mineral'nogo syr'ya, Moskva.
(Mineralogy)

GAYDUKOVA, V.S.; ZDORIK, T.B.

Rare-metal minerals in carbonatites. Geol. mest. red. elem.
no.17:86-117 '62. (MIRA 16:10)

(Carbonatites) (Metals, Rare and minor)

BAGDASAROV, Yu.A.; GAYDUKOVA, V.S.; KUZNETSOVA, N.N.; SIDORENKO, G.A.

Find of lueshite in Siberian carbonatites. Dokl. AN SSSR 147
no.5:1168-1171 D '62. (MIRA 16:2)

1. Predstavleno akademikom D.I. Shcherbakovym.
(Siberia--Minerals) (Niobium compounds)

GAYDUKOVA, V.S.; POLUPANOVA, L.I.; STOLYAROVA, T.I.

Hatchettelite from carbonatites of Siberia. Min.syr'e no.7:86-95
'63. (MIRA 16:9)

(Siberia--Hatchettelite--Analysis)
(Siberia--Carbonatites)

Gaydukova, Z. V.

GORODITSKAYA, H.V., kandidat khimicheskikh nauk; GAYDUKOVA, Z.V.; KIR'YANOVA,
A.M.

Determining the degree of moisture in raw hides. Leg.prom.15 no.10:
31 0 '55. (MIRA 9:1)

(Hides and skins)

KAMAY, G.Kh.; NIKOLAYEVA, A.D.; NIKOLAYEV, V.S.; SAFRONOVA, L.M.;
GAYDUKOVICH, N.A.

Synthesis of β -bromo- γ -nitropropylene and study of its nitration
with nitrogen dioxide. Trudy KKHTI no.30:116-119 '62.
(MIRA 16:10)

S/133/62/000/004/006/008
A054/A127

AUTHORS: Baklushin, L.N.; Gaydukovskiy, N.V.; Dukhin, I.S.; - Engineers

TITLE: Electric-pulse machining of transverse flutes on grooves of rolls
for rolling alternating reinforcement sections

PERIODICAL: Stal', no. 4, 1962, 330 - 333

TEXT: The Eksperimental'nyy nauchno-issledovatel'skiy institut metallo-rezhushchikh stankov (Experimental Scientific Research Institute of Metal-Cutting Machine Tools, ENIMS) and the Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine) have developed a pilot installation for fluting rolls of elevated hardness by means of unipolar electric pulses of medium and long duration (10^{-4} - 10^{-2} sec). The pilot equipment was designed in cooperation with A.S. Opolinskiy (ENIMS), N.V. Gaydukovskiy, A.P. Shemyavich, I.L. Prisazhnyuk, G.M. Gubanishv and V.A. Bezobrazov (MMK). By this method the metal is removed directly from the rolls by the force of loaded particles. Consequently, the operating elements of the machine need only be of simple design and their number can be increased considerably (up to more than 20 grooves). The tool need not be of exceptionally hard or strong material; it may also have various shapes,

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A054/A127

Electric-pulse machining of transverse

the main object being that the shape is suitable for fluting at a high rate a great number of grooves. An MIV-2 (MGI-2) type machine generator was used for the generation of the electric pulses (pulse frequency: 400/sec; average power 4.3 - 6.4 kw; current 80 - 100 amp; metal cutting rate (for steel) 1,200 - 1,500 mm³/min; drive motor speed 3,000 rpm; its power: 6 kw). The pilot equipment was reconstructed from an old horizontal milling machine. The electrode is a copper tube, coiled with trapezoidal copper wire; the pitch and number of threads correspond to the projections on the rolled rod. There are 3 patterns for the interaction between the electrode and the roll (Fig. 1). Version II was used on the pilot installation, ensuring a large contact surface between the roll to be fluted and the electrode. In this version the electrode moves together with the feed table and the roll rotates in the same direction. Version III of the roll-electrode interaction, however, promises an even larger contact surface, in spite of the process being intermittent, due to the reciprocating motion of the electrode in this case. The feed is controlled automatically. The machine must be adjusted in such a way that there is no play of the roll in the direction of the feed mechanism, that the electrode is fixed accurately in respect of the groove axis and that the peripheral speed of the roll is synchronized with the linear speed of the electrode. The number of flutes to be eroded (the number of

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Electric-pulse machining of transverse

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threads on the electrode) can be calculated with $z = \frac{\pi D}{l}$ (D = roll diameter at the groove bottom, l = pitch of fluting). The total depth of the flute is obtained during one revolution of the roll. The method is applied in rolling No. 10 and 12 sections on the 250-I small section rolling mill (barrel-diameter 300 mm; barrel length 750 mm; roll-neck diameter 160 mm; roll-neck length 260 mm). After having tested rolls of various grades (alloyed cast iron, cast iron with an elevated nickel content, etc) and of varying hardness (400 - 420 HB or 54 - 56 HSh, 55 - 65 HSh) it was found that for rolling No. 10 and 12 sections, rolls made of chilled carbon cast iron with a barrel minimum hardness of 70HSh is the most suitable for this purpose. It is important that the working surface of the electric-pulse machined rolls does not form any stable joint with the metal rolled and scale, which would spoil the groove. The inclination of the flute walls is increased when the electric pulse method is used which improves the bond between concrete and reinforcement. The new fluting method saves 3.5% of metal on an average during rolling and reduces the weight of 1 running meter of sections from 944 to 912 g (with new grooves) and from 991 to 959 g (with worn grooves). The service life of electric-pulse machined rolls is increased by a factor of 2. There are 3 figures and 2 tables.

ASSOCIATION: Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)

Card 3/4

GAYDUKOWSKIY, Ya. (r Riga)

Workshop and dispensary for disabled workers. Prom.koop.no.5:37
My '56. (MLRA 9:9)

1.Tekhnoruk arteli "Dzirkstelo".
(Riga--Disabled--Rehabilitation, etc.)

GAYDZHUROV, P.P.

AZELITSKAYA, R.D., kandidat tekhnicheskikh nauk.; GAYDZHUROV, P.P., inzhener.

Increasing the efficiency of wet grinding of cement clinker.
Bul. stroi. tekhn. 14 no.3:12-15 Mr '57. (MLRA 10:5)

1. Novocherkasskiy politekhnicheskiy institut.
(Cement)

ONOMAREV, I.F.; GRACH'YAN, A.N.; GAYDZHUROV, P.P.

Rapid determination of metallic iron in cements. Zav.lab. 29 no.2:
163 '63. (MIRA 16:5)

1. Novocherkasskiy politekhnicheskii institut.
(Iron--Analysis) (Cement)

PONOMAREV, I.F.; GRACH'YAN, A.N.; GAYDZHUROV, I.P.

Use of the magnetic method for determining the metallic iron
content of white Portland cement. Izv.vys.ucheb.zav.; khim. i
khim.tekh. 7 no.2:341-343 '64. (MIRA 18:4)

1. Novocherkasskiy politekhnicheskii institut, kafedra
tekhnologii vyazhushchikh veshchestv.

GAYED, Y.

The swirling flow under gravity through bottom outlets. Tr. From the English:

P. 138 (Hidrologiai Kozlony. Hydrological Journal. Vol. 37, no. 2, 1957,
Budapest, Hungary.)

Monthly Index of EastEuropean Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958

NASSEF, El Adawy, prof.dr.; GAYED, Y.K., prof.dr.; KONKOLY, Balazs [translator]

The swirling flow under gravity through bottom outlets.
Hidrologiai Kozlony 37 no.2:138-148 '57.

GAYEK, M.I.; ROSHAL', M.Ye.

Early surgical intervention in paraphimosis. Khirurgiya no.9:78-79 S '53.
(MLRA 6:11)

1. Is kliniki detskey khirurgii (zaveduyushchiy - zasluzhennyy deyatel' nauki professor I.S.Ginsburg) Azerbaydzhanskogo meditsinskogo instituta (direktor - professor B.A.Ryvanov).
(Poniz)

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16,6100 (2403)

S/044/61/000/010/034/051
C111/C222

AUTHOR: Gayek, Yaroslav

TITLE: On a property of normal distributions of an arbitrary stochastic process

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1961, 8,
abstract 10 V 37. ("Chekhosl. matem. zh.", 1958, 8, no. 4,
610-618) ✓

TEXT: Two probability distributions $P\{\cdot\}$ and $Q\{\cdot\}$ given on a certain Borel field \mathcal{F} are equivalent ($P \equiv Q$) if the equations $P\{\Lambda\} = 0$ and $Q\{\Lambda\} = 0$ result one from another for all $\Lambda \in \mathcal{F}$.
Reversely: If a $\Lambda \in \mathcal{F}$ can be given so that $P\{\Lambda\} = 0$, $Q\{\Lambda\} = 1$, then it is said that P and Q are mutually singular ($P \perp Q$). The author considers the J-difference of the densities $p(x_1, \dots, x_n)$ and $q(x_1, \dots, x_n)$ defined by the relation

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On a property of normal distributions ... S/044/61/000/010/034/051
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$$J = M_p \left\{ \lg \frac{p}{q} \right\} - M_q \left\{ \lg \frac{p}{q} \right\}$$

where M_p and M_q are the mathematical expectations of

$$\lg \frac{p(x_1, \dots, x_n)}{q(x_1, \dots, x_n)}$$

with respect to the densities $p(x_1, \dots, x_n)$ and $q(x_1, \dots, x_n)$. It is proved that for every $\epsilon > 0$ there exists a number K_ϵ with the following property: If n is an arbitrary natural number and if $p(x_1, \dots, x_n)$ and $q(x_1, \dots, x_n)$ are arbitrary (regular) n -dimensional normal densities the J -difference of which satisfies the condition $J > K_\epsilon$ then there exists a $\lambda \in F$ so that it holds

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On a property of normal distributions ... C111/C222

$$\int p(x_1, \dots, x_n) dx_1 \dots dx_n < \varepsilon ,$$

$$\int q(x_1, \dots, x_n) dx_1 \dots dx_n > 1 - \varepsilon .$$

The proof is given at first for the special densities

$$p(x_1, \dots, x_n) = (2\pi)^{-n/2} \exp \left\{ -\frac{1}{2} \sum_{i=1}^n x_i^2 \right\} ,$$

$$q(x_1, \dots, x_n) = (2\pi)^{-n/2} \exp \left\{ -\frac{1}{2} \sum_{i=1}^n \left[\left(\frac{x_i - \mu_i}{\sigma_i} \right)^2 - \lg \sigma_i^2 \right] \right\}$$

for which

$$J = \frac{1}{2} \sum_{i=1}^n \left[\frac{(\sigma_i^2 - 1)^2}{\sigma_i^2} + \mu_i^2 \left(1 + \frac{1}{\sigma_i^2} \right) \right] ,$$

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On a property of normal distributions ... ³²⁴⁶⁶
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and then it is extended to arbitrary (regular) normal densities. It is stated that if the distribution of the vector (x_1, \dots, x_n) is normal

(regular or singular) then the equation $x_n = \sum_{i=1}^{n-1} c_i x_i + c_0$, where c_i

are arbitrary constants, holds with the probability 0 and 1. The author proves the basic theorem: Each two normal distributions $P\{\cdot\}$ and

$Q\{\cdot\}$ of the stochastic process $\{x_t, t \in T\}$ are either equivalent or mutually singular depending on the fact whether their J-difference is finite or infinite; here it holds $J = \sup_{t_1 \dots t_n \in T} J_{t_1 \dots t_n}$ and

$J_{t_1 \dots t_n}$ denotes the J-difference of the corresponding n-dimensional P

and Q distributions. The theorem is illustrated by two examples (in the first one the author obtains one process from another by a scale change

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On a property of normal distributions ... S/044/61/000/010/034/051
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of the axis of values ; in the second one the author considers Gaussian
Markov processes with equal correlation functions and different means).

[Abstracter's note : Complete translation.]

X

Card 5/5

Gayek, Yu. V.

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibria,
Physical - Chemical Analysis, Phase Transitions.

B-8

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3749.

Author : Yu. V. Gayek, B.L. Timan.

Inst :

Title : Influence of Multiple Thermal Ionization on Specific Heat of
Gases.

Orig Pub: Zh. eksperim. i teor. fiziki, 1956, 31, No 4, 706-707.

Abstract: The gas specific heat adjustment (C'_v) for multiple thermal
ionization was computed in a general form. The specific heat
depends strongly on temperature in case of tens and hundreds
of thousands degrees. See also RZhKhim, 1955, 54609.

Card : 1/1

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GAYEK, Yu.V., inzh.; DRUKOVANYI, M.F., inzh.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R000514520011-2"

Research on the process of the breaking of a massif with instan-
taneous and short-delay blasting. Ger zhur. no. 6:29-33 Je '61.

(MIRA 14:6)

1. Dnepropetrovskiy gornyy institut.
(Blasting)

22871

S/077/61/006/004/003/004
D051/D113

3.1220 (1106,1395,1062)

AUTHORS: Belayenko, F.A.; Gayek, Yu.V.; and Drukovanyy, M.F.

TITLE: The use of a high speed moving film for the photoelastic study of stresses occurring in solid bodies during an explosion

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii,
v. 6, no. 4, 1961, 286-288

(MIRA 14:11)

TEXT: The authors describe a new method of studying the dynamic fields of isochromes originating during the explosion of charges in an optically active medium. Experiments based on this method are being carried out at the laboratory of optical methods of studying stresses of DGI. For the photographic recording of stress waves, an $\text{C}\Phi\text{P}$ (SFR) high speed cinematographic installation with a maximum speed of $2.5 \cdot 10^6$ frames/sec, in combination with an ИМАШ-КБ22 (IMASH-KB-22) optical polarizing installation, is used. In this case, plane stresses are investigated. The models are plates made of optically active material with cylindrical perforations in which a 0.05-0.12 g lead azide charge is located. The principal optical scheme of the installation is shown in figure 1. On detonation of the

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22871

The use of a high speed moving film

S/077/61/006/004/003/004
D051/D113

charge the camera mirror which rotates at 75,000 rev./min, transmits the image to a cine film with the aid of a system of shutters which permit the frame frequency to be increased to $2.5 \cdot 10^6$ frames/sec. An *NCW* 100-3 (ISSh 100-3) flash tube serves as a light source, the flash duration being reduced to 100 μ sec. At a minimum inductance of the discharge circuit, this tube has sufficient brightness for the photographic recording of a picture of isochromes in red light. A high-voltage pulse is introduced, when the mirror is in the working position. This pulse is divided into two pulses by a voltage divider (Fig.2): one pulse ignites the tube, while the other is used for triggering the discharge across a gap in the starting circuit. The charge is ignited by combustion of a 30 μ thick constantan wire passing through it. Using this method, the authors obtained pictures of isochromes occurring in glass, plexiglass, and celluloid on detonation of charges in these materials. The clearest pictures obtained were those of isochromes occurring in celluloid, which has a mean optical sensitivity and a speed of propagation of stress waves of 1,600 m/sec. The described method can be successfully used for the study of dynamic stress fields, processes of fissure

Card 2/5

22871

S/077/61/006/004/003/004
D051/D113

The use of a high speed moving film

formation, the role of reflected waves, etc., in mountains during blasting operations. There are 3 figures and 5 Soviet references.

ASSOCIATION: Gornyy institut (Mining Institute), Dnepropetrovsk

SUBMITTED: August 10, 1960

+

Card 3/5

BELAYENKO, F.A., prof., doktor tekhn.nauk; GAYEK, Yu.V., gornyy inzh.;
DRUKOVANYI, M.F., gornyy inzh.

Relationship between charges and the formation of a funnel in
instantaneous firing. Vzryv. delo no.47/4:230-239 '61.
(MIRA 15:2)

1. Dnepropetrovskiy gornyy institut.
(Blasting)

GAYEK, YU. V.

PHASE I BOOK EXPLOITATION

21
SOV/6098

Assonov, V. A., and L. A. Paporotskiy, Resp. Eds.

Novoye v sredstvakh i sposobakh vzryvaniya (New Developments in
Blasting Means and Methods). Moscow, Gosgortekhzdat, 1962.
124 p. (Series: Vzyvnoye delo; Sbornik no. 48/5) Errata
slip inserted. 3000 copies printed.

Sponsoring Agency: Nauchno-tekhnicheskoye gornoye obshchestvo.

Ed. of Publishing House: A. Ya. Koston'yan; Tech. Eds.: L. I.
Miner and G. M. Il'inskaya.

PURPOSE: The book is intended for mining engineers, workers
in scientific research and planning organizations, and also
for teachers and students of mining and technical schools.

COVERAGE: This collection of articles describes new blasting
means and methods, means of protecting electric detonators
from stray currents, and improved methods of short-delay
detonation.

Card 1/6

New Developments in Blasting Means (Cont.)

307/6098

Gorbacheva, Ye. P. Assembling an Electric-Detonating Network
for Blasting Nondimensional Rock

98

Abinder, G. A. Safety Short-Delay Electric Detonators

101

Davydov, S. A. Selection of Means for Short-Delay Blasting

104

Rubtsov, V. K. Introduction of the K3-58 Relay at the Sibay
Mine

108

Davydov, S. A., and L. S. Komarova. Industrial Testing of the
Factory-Produced K3-58 Pyrotechnic Relay

111

Gayek, Yu. V., M. F. Drukovanny, and V. V. Mishin.
Burden-to-Spacing Ratio

113

Journal Decisions for 1960-1961 of the Gosgortekhnadzor RSFSR.
[Komitet po nadzoru za bezopasnym vedeniem rabot v promysh-
lennosti i gornomu nadzoru pri

Card 5/6

GAYEK, Yu.V., inzh.; DRUKOVANYI, M.F., inzh.; MOMOT, K.V., inzh.

Flow of blasting products from the hole. Izv. vys. ucheb. zav.;
gor. zhur. 5 no.1:84-89 '62. (MIRA 15:4)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy
institut imeni Artema. Rekomendovana kafedroy razrabotki
rudnykh mestorozhdeniy i otkrytykh rabot Dnepropetrovskogo
gornogo instituta.

(Blasting)

GAYEK, Yu.V., inzh.; DRUKOVANYI, M.F., kand.tekhn.nauk; MISHIN, V.V., inzh.

Effect of blasting operations on the stability of mine workings
and the amount of excess broken rock in driving them. Shakht.
stroil. 6 no.7:6-7 JI '62. (MIRA 15:7)

1. Dnepropetrovskiy gornyy institut.
(Blasting)

GAYEK, Yu.V.; DRUKOVANY^Y, M.F.; MISHIN, V.V.

Mechanism of rock destruction and calculation of delay intervals in
mining operations. Ugol' 37 no.7:22-25 JI '62. (MIRA 15:7)

1. Dnepropetrovskiy gornyy institut.
(Blasting)

GAYEK, Yu.V.; DRUKOVANNYY, M.F.; MISHIN, V.V.

Proximity coefficient of charges. Vzryv. delo no.48/5:113-122
'62. (MIRA 15:9)

1. Dnepropetrovskiy gornyy institut.
(Blasting)

DRUKOVANYI, M.F., kand.tokhn.nauk; MISHIN, V.V., inzh.; GAYEK, Yu.V., inzh.

Shattering of rocks in instantaneous and short-delay
firing. Vzryv. delo no.50/7:31-44 '62. (MIRA 15:9)

1. Dnepropetrovskiy gornyy institut imeni Artema.
(Blasting)

DRUKOVANYI, M.F., kand.tekhn.nauk; GAYEK, Yu.V., inzh.; MISHIN, V.V.

Effect of fracturing on the nature of rock shattering
by blasting. Vzryv. delo no.50/7:98-103 '62. (MIRA 15:9)

1. Dnepropetrovskiy gornyy institut imeni Artema.
(Blasting) (Rocks)

KUCHERYAVYY, Feodosiy Ivanovich; DRUKOVANYI, Mikhail Fedorovich;
GAYEK, Yuriy Vladimirovich; DEMIDYUK G.P., otv. red.;
GEYMAN, L.M., red. izd-va; SHKLYAR, S.Ya., tekhn. red.

[Short delay blasting in open-cut mines] Korotkozamedlennoe
vzryvanie na kar'erakh. Moskva, Gosgortekhzdat, 1962. 226 p.
(MIRA 16:2)

(Blasting) (Mining engineering)

GAYEK, Yu.V., inzh.

Breaking down a bench by detonating a vertical borehole
charge. Vzryv. delo no.50/7:48-55 '62. (MIRA 15:9)

1. Dnepropetrovskiy gornyy institut imeni Artema.
(Blasting)

BELEYENKO, F.A., prof., doktor tekhn. nauk[deceased]; GAYEK, Yu.V.,
kand. tekhn. nauk; MISHIN, V.V., kand. tekhn. nauk

Study of stress fields in breaking rocks with column
charges. Varyv. delo no.51/8:77-85 '63. (MIRA 16:6)

1. Dnepropetrovskiy gornyy institut.
(Blasting) (Strains and stresses)

GAYEK, Yu.V., kand. tekhn. nauk; DRUKOVANYI, M.F., kand. tekhn. nauk;
MISHIN, V.V., kand. tekhn. nauk

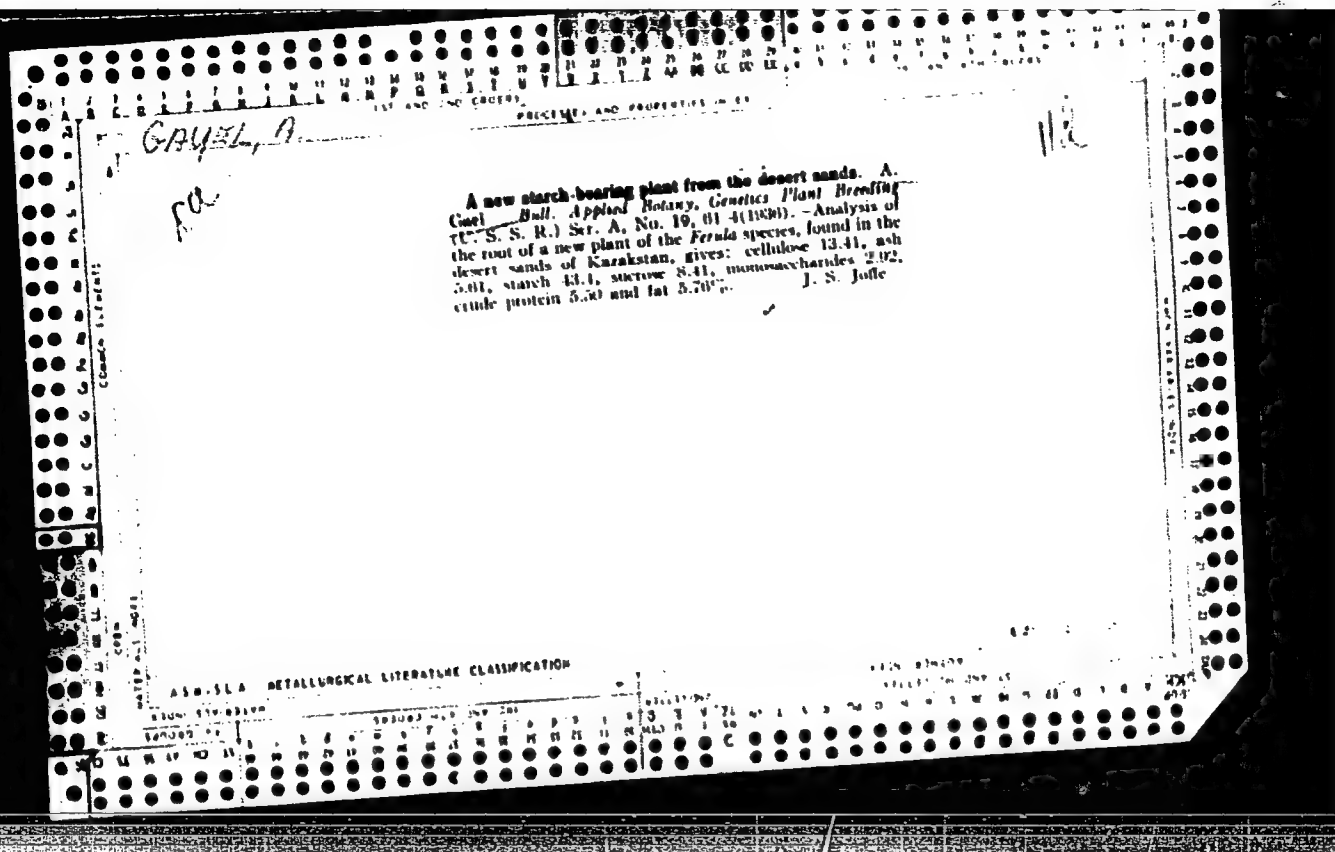
Speed of the development of fractures in rocks and solid bodies
and methods of measuring it. Vopr. delo no.51/8:85-96 '63.

1. Dnepropetrovskiy gornyy institut.
(Blasting)

GAYEK, Yu.V., kand. tekhn. nauk; SHUMILO, V.A., inzh.

Stress waves of the central and axial symmetry in an elastic and infinite medium, and the analysis of current views about their nature. Vzryv. delo no.57/14:90-105 '65. (MIRA 18:11)

1. Dnepropetrovskiy gornyy institut.



1ST AND 2ND SERIES										PROCESSING AND PROPERTIES INDEX										3RD AND 4TH SERIES									
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1ST AND 2ND SERIES										3RD AND 4TH SERIES										5TH AND 6TH SERIES									

GAYEL', A. G.

21460

GAYEL', A. G.

Gidrologicheskiye nablyudeniya nad gruntovymi vodami v
peskakh Severnogo Priaral'ya.

Trudy Vtorogo Vsesoyuz. geogr. s"yezda, T. P.M., 1948, s. 255 - 63

SC: Ietopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

GAYEL', A. G.

USSR/Soil Science
Permafrost

Jul 48

"Freezing and Thawing of the Ground in Northern
Ural Regions in the Winter of 1946 - 1947,"
A. G. Gayel', 16 pp

"Pochvovedeniye" No 7

Results of observations on the action of freezing
and thawing of light soils of the northern Ural
regions. Freezing usually occurs in Nov, and
all soils, regardless of composition, freeze at
same time. Freeze lasts 100 - 160 days and

36/497106

USSR/Soil Science (Contd)

Jul 48

thawing period 10 - 40 days. Depth of freezing
is about 2 meters. During freezing period humd
sands freeze and contain fissures which permit
percolating surface waters and early thaw water
to infiltrate.

36/497106

GATEL, A. G.

36776. Obleseniye peskov v Severnom Priural'ye. Vestnik Akad. nauk kazakh. SSR.
1949, No. 8, c. 38 - 42. -- Rezyume na kazakh. yaz.

SC: Letopis Zhurnal'nykh Statey, Vol. 50, Moskva, 1949

GAYEL', A. G.

"Afforestation of The Upper Don Sands," Pochvovedeniye, No 12, 1949.

Translation W-15552, 1 Dec 50

*Prisral' Experiment. Station, all-Union Inst. Plant Ecology,
Atyubinsk Oblast.*

1. GAYEL', A. G. , KOLIKOV, M. S., MALYUGIN, YE. A., OSTANIN, YE. S.
2. USSR (600)
4. Geology and Geography
7. Sandy Deserts around the Northern Aral Sea and Ways to their Clarification, A. G. Gayel', M. S. Kolikov, Ye. A. Malyugin, Ye. S. Ostanin. (Institute of Deserts, Acad Sci Kazak SSR, Vol II, Alma-Ata, Press of Acad Sci Kazak SSR, 1950.
9. ~~SECRET~~ Report U-3081, 16 Jan. 1953. Unclassified.

1. GAYEL' A. G.
2. USSR (600)
4. Geology and Geography
7. Afforestation of Hill Lands Around the Aral Sea, (Acad Sci USSR, Institute of Forests, Moscow, Press of Acad Sci USSR, 1951).
Reviewed by M. S. Buyanovskiy and B. A. Fedorovich. Sov. Kniga, No. 7, 1952.

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GAYEL, A.G.

6.1-180

551.556.2:551.584

Gayel, A. G., *Polezashchilnoe lesorazvedenie v Severnom Priaral'e*. [Shelter belts forestation in the northern Aral region.] *Akademiia Nauk SSSR. Institut Lesa. Nauchnye Voprosy Polezashchilnogo Lesorazvedeniia*, No. 1:309-327, 1951. 21 figs., 2 tables. DLC—
A number of microclimatic profiles show the influence of shelter belts on snow cover and soil moisture (isopleths up to 200 cm), depending on air temperature and precipitation. *Subject Headings*: 1. Microclimatic profiles 2. Shelter belt effects 3. Soil moisture.—J.A.


GAYEL', A. G.

Obleseniye bugristykh peskov zasushlivykh oblastey (Afforestation of hilly, sandy arid regions) Moskva, Geografiz, 1952.

216 p. illus., diagrs., maps.

"Literatura": P. 207-216.

N/5
729.411
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1. GAYEL', A. G.; KUNIN, V. N.
2. USSR (600)
4. Geology and Geography
7. The Field-Forest Improvement of Sands in the Deserts and Semideserts of the USSR, M. P. Petrov, D. L. Margolina (bibliographic editress). (Bibliography of literature in the Russian language, 1768-1950. Academy of Sciences of Turkmen SSR Library of Academy of Sciences of the USSR. Leningrad State Pedagogic Institute imeni M. N. Pokrovskiy. Ashkhadab. Acad Sci Turkmen SSR Press, 1952). Reviewed by A. G. Gayel' and V. N. Kunin, Sov. Kniga, No. 11, 1952.
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GAYEL', A. G.

"Forest Island in the Snads of Kazakhstan," Priroda, No.2, 1952

GAYEL', A. G. and ALEKSEYEV, V. D.

"Fertilizing Forest Stock on Sandy Soil," Les. 1 step., 4, No.7, 1952

1. GAYEL', A.: ALEKSEYEV, V.
2. USSR (600)
4. Fertilizers and Manures
7. Letter to the editor. Les i step' 14 no. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

GAYEL', A. G., DZIUBA, A. S.

Caspian Sea Region - Afforestation

Afforestation of the semiarid dunes of the Caspian Sea area. Les. khoz. 5 no. 6 (1952)

9. Monthly List of Russian Accessions, Library of Congress, August. 195~~8~~2, Uncl.

1. GAYEL', A. G. ; KUNIN, V. N.
2. USSR (600)
4. Petrov, Mikhail Platonovich, 1906-
7. Reclamation of sands of deserts and semi-deserts by agriculture and forestry in the U. S. S. R.; bibliography of the literature in Russian, 1768-1950." M. P. Petrov. Reviewed by A. G. Gayel', V. N. Kunin. Sov kniga no. 11. '52.
9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

GAYEL', A.G., MEYERSON, E.G.

"Nature and agriculture of the Volga-Ural interfluvium" by M.S.
Bulanovskii, A.G. Doskach, V.M. Fridland. Reviewed by A.G. Gayel',
E.G. Meerson. Izv. AN SSSR, Ser. geog. no. 6: 128-132 N-D '56.
(Caspian Depression—Geography) (MLRA 10:1)

USSR / Forestry. Biology and Typology of the Forest. K-2

Abs Jour: Ref Zhur - Biologiya, No. 1, 1958, 1321.

Author : 'Gayel', A.G., Yakshina, A.M., Demidova, L.S.

Title : A Living Pine Windfall in the Urda Sands

Orig Pub: Botan. zh., 1957, 42, No. 5, 756-759

Abstract: Described is an example of a living pine windfall in a growth, near the Zhaskus resort, which had been thinned out by cutting. The growth of the undamaged branch-shoots is described. It is noted that the biggest branch, situated at a distance of 3.9 meters from the root collar, is fertile. Similar pine windfalls are known in the Siberian pine belts. The root system of the pine windfall is described.

Card 1/1

BOLYSHEV, N.N.; GAYEL', A.G., doktor sel'skokhozyaystvennykh nauk; GOL'DADE,
E.A., agronom

Special problems of agriculture on sandy loam soils in areas where
new lands are being brought under cultivation. Zemledelie 6 no.12:
55-62 D '58. (MIRA 11:12)

(Kazakhstan--Reclamation of land)

GAYEL', A.G.; PISTRENKO, Ye.S.

Growth of pine on dunes of the Irtysh Valley. Nauch.dokl.vys.
shkoly; biol.nauki no.1:202-209 '59. (MIRA 12:5)

1. Rekomendovana kafedroy fiziki i melioratsii pochv Moskovskogo
gosudarstvennogo universiteta im. M.V.Lomonosova.
(IRTYSH VALLEY--PINE)

GAYEL', A.G., SMIRNOVA, L.F.

Wind erosion of light soils in the Chestnut-Chernozem
zone of the U.S.S.R. Vest. Mosk. un. Ser. 6: Biol., pochv. 15
no.2:51-62 '60. (MIRA 13:6)

1. Kafedra fiziki i melioratsii pochv Moskovskogo universi-
teta.

(Russia, Southern--Erosion)

GAYEL', A.G.; LIDOV, V.P.

Problems in the study of soil erosion and its control. Nauch.
dokl. vys. shkoly; biol. nauki no.4:178-185 '61. (MIRA 14:11)

1. Rekomendovana kafedroy fiziki i melioratsii pochv Moskovskogo
gosudarstvennogo universiteta im. M.V.Lomonosova.
(SOIL CONSERVATION)

GAYEL', A.G.; TRUSHKOVSKIY, A.A.

Age and the classification of soils in the aeolian sands of the
steppe zone. Izv. AN SSSR. Ser. geog. no.4:28-42 J1-Ag '62.
(MIRA 16:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova i
Institut geografii AN SSSR.
(Sand dunes) (Geological time) (Steppes)

BRYSOVA, L.P.; GAYEL', A.G.

Materials on the evaluation of moisture in the sandy soils of
pine strip forests in the Irtysh Valley. Vest. Mosk. un. Ser.
6: Biol., pochv. 17 no.1:65-74 Ja-F '62. (MIRA 15:1)

1. Institut lesa AN SSSR.
(Irtysh Valley--Pine)
(Soil moisture)

GAYEL', A.G.; TRUSHKOVSKIY, A.A.

Deflation phases and the age of soils on the aeolian sands in the
steppe zone of the U.S.S.R. Vest. Mosk. un. Ser. 5: Geog. 17
no.6:24-31 N-D '62. (MIRA 16:1)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo
universiteta i Institut geografii AN SSSR.
(Sand dunes) (Soil formation)

GAYEL', A.G.; VORONKOV, N.A.

Interrelationship between trees and herbaceous vegetation in
isolated pine woods of Kazakhstan. Nauch.dokl.vys.shkoly;
biol.nauki no.2:131-140 '63. (MIRA 16:4)

1. Rekomendovana kafedroy geobotaniki Moskovskogo gosudarstven-
nogo universiteta im. M.V.Lomonosova.
(KUSTANAY PROVINCE--PINE) (FOREST ECOLOGY)

GAYEL', A.G.; SMIRNOVA, L.F.

Classification of light soils based on their wind erodibility.

Pochvovedenie no.4:1-15 Ap '65.

(MIRA 18:6)

1. Moskovskiy gosudarstvennyy universitet.

GAYEL', A.O.

Stop wind erosion of soils. Vest. Mosk. un. Ser. 6: Biol., pochv. 20
no.3:3-12 My-Je '65. (MIRA 18:7)

1. Kafedra fiziki i melioratsii pochv Moskovskogo universiteta.

GAYEL', A.G., prof.

Stop wind erosion of soils. Zemledelie 27 no.6:21-24 Je '65.
(MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet.

GAYEL', A.G.; VORONKOV, N.A.

Root system of the Scotch pine (*Pinus silvestris* L.) in the sandy soils of Kazakhstan and the Don Valley. Bot. zhur. 50 no.4:503-516 Ap '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut agroiesomeliioratsii, Pushkino, Moskovskoy oblasti.

GAYEL', A.G.; GUMILEV, L.N.

Uneven-aged soils on the steppe sands of the Don Valley and
the migration of peoples during the period of recorded history.
Izv. AN SSSR Ser. geog. no. 1:11-20 Ja F '66 (MIRA 19:2)

1. Moskovskiy gosudarstvennyy universitet i Leningradskiy gosu-
darstvennyy universitet imeni A.A. Zhdanova.

ACHKINAZI, S., inzh.-polkovnik; GAYDENKO, A., inzh.-polkovnik; SHCHERBAN', V.,
inzh.-podpolkovnik; ANIKOVICH, B., kapitan tekhn. sluzhby;
KUZNETSOV, A., inzh.-kapitan; BIRYUKOV, A., starshiy inzh.-leytenant.

Experience in using a standard kit of universal accessories. Tankist
no.2:57-60 F '58. (MIRA 11:3)
(Tanks (Military science)--Maintenance and repair)

L 28382-66 EWP(c)/EWP(k)/EWT(d)/EWT(m)/EWP(h)/ETC(m)-6/T/EWP(l)/EWP(v)/EWP(t)/ETI

ACC NR: AP5023387 (A) IJP(c) DJ/JD SOURCE CODE: UR/0317/65/000/005/0062/0066

AUTHOR: Vovk, F. (Major general of engineering-technical service);
Gayenko, A. (Engineer, Lieutenant Colonel); Gutman, M. (Engineer, Lieu-
 tenant Colonel); Gershteyn, S. (Engineer, Lieutenant Colonel)

ORG: None

TITLE: Prolongation of machine life , 4

SOURCE: Tekhnika i vooruzheniye, no. 5, 1965, 62-66

TOPIC TAGS: ordnance engineering, military tank, internal combustion engine

ABSTRACT: The present paper, consisting of three separate articles, deals with the operation, maintenance and repair of armored tanks, engines and auxiliary equipment. The authors of the first article, F. Vovk and A. Gayenko, do not recommend overhauling new engines of the B-2 type until a general overhauling of the entire tank is required. However, meticulous checking of engine parts between general overhauls is strongly recommended. In connection with this subject, an example of the monthly discussions at the Ul'yanov Guard Armored Tank School was mentioned. Reducing-gear bearings of heavy tanks are to be checked after a run of 200 to 300 km. The level of liquid in the engine cooling system must be checked every 2 or 3 hours. A regular replacement of track

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ACC NR: AP5023387

4

chain pins can increase the run distance by 600 to 800 km. The caterpillars service life can be twice as long if they are kept well adjusted and maintained. A set of gages for caterpillars was proposed by Officer Lopatin. This set was shown in a figure, as well as a device for changing pins. In conclusion, further development of special commissions for inspection of tanks was strongly recommended. The second article, by M. Gutman, deals with the repair of engines and their parts at an automobile-repair plant. Mechanical cleaning of oil pipes and channels, use of diamond drills for honing, careful cleaning of parts (including ultrasonic method) and other improvements were recommended. Filters, oil radiators and fuel equipment were cleaned by using the UZG-LOM device. Mass production methods were introduced for cleaning and polishing operations. A special automatic device was invented for honing operations of YaAZ engines. The advantages of diamond honing were stressed. The machining of crankshafts was organized in cooperation with the Khar'kov Automobile-Road Institute. Following the experience of the Khar'kov and Yaroslavl engine plants, the tightening of bolts were checked by dynamometric wrenches. A table was presented showing the wrench types and tightening forces to be applied to different engine parts. The third article, by S. Gershteyn, contains some critical observations on various suggestions such as: keeping the heating system connected in summer or muffling the engine if the temperature of cooling liquid is 80 C. Ex-

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ACC NR: AP5023387

cessive inspection and duplication in control checking was also criticized. The successful maintenance and repair practice of Omsk Armored Tank Technical School was mentioned. Orig. art. has: 2 figures and 1 table.

SUB CODE: 19 / SUBM DATE: None / ORIG REF: 000 / OTH REF: 000

Card 3/3 *ce*

22(3)

SOV/175-58-6-26/41

AUTHOR: Gayenko A., Engineer-Lieutenant - Colonel

TITLE: Repair in the Field

PERIODICAL: Tankist, 1958, Nr 6, pp 38-41 (USSR)

ABSTRACT: . The author refers only to the tank running gear. Such repair is most commonly needed under field conditions, and should be performed not only by fitters but also by the crew. The author raises the matter of camouflaging the project. In summer, a simple frame assembled from clamped section-steel can be used. (Figure 1). In winter a metal workshop tent will do. The replacement of the track shoe and tensioning of the caterpillar is a simple operation. A pulley block and a crow bar are the tools to be used for tensioning (Figure 2). Often, under field conditions, the bogie wheels have to be changed. This operation is fully explained in the "Rukovodstvo po voyskovomu remontu" (Organizational Maintenance Guide). The removal of the bogie

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SOV/175-58-6-26/41

Repair in the Field

wheel must be performed very carefully. Damage to the labyrinth packing grooves and the axle thread must be avoided. This operation can be performed with the help of Master Sergeant Styukhin's device (Figure 3). The journal "Tankist" (Nr 2, 1958) contains a detailed description of the device. An incorrect tightening causes a displacement of bearings. This is necessarily followed by a repeated removal of the bogie wheel and a restarting of the whole operation. To avoid this, a box spanner must be used and kept fixed against the wheel hub until the bearing fully enters its bush as is shown on the sectional drawing (Figure 4). A very important operation in field repair is replacement of the torsion bar. This necessitates removal of one or even two bogie wheels. The hydraulic GP-10-1 press and the universal UK-8 device are used in this operation. The torsion bar must be slid out together

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Repair in the Field

with the rocker arm (Figure 5). This operation may also be simplified by beating the torsion bar with a hammer from inside the tank. The fitting of a new torsion bar into the bracket grooves at the opposite side of the tank is a difficult operation. To achieve this, the device in Figure 3 must be used conjointly with the set-spanner (Figure 6). On no account should the rollers of the torsion bar support be driven in with a hammer. The replacement of a driving wheel requires dismantling the whole tank section. A special spanner is to be used for this operation, as is shown in the sectional drawing (Figure 7). When overhauling the caterpillar tension mechanism, the worms and worm wheels must be skilfully handled. If wrongly mounted, connecting the idler wheel with its crankshaft may prove to be difficult. The bolts of the armor plate may be

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secured either with washers having bent rims or
with spring washers. There are 5 diagrams and 2
sectional drawings.

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